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ARCNET® Local Area Network Driver LAND™

SECTION III

FEATURES

- Compatible with existing ARCNET® installations
- Compatible with ARCNET® coax drivers
- Pin Compatible with ARCNET® fiber-optic drivers
- Space saving economy
- 20 pin single in line package (SIP)
- Straight or right angle lead frame
- Built in filters for noise immunity
- Drives up to 2,000 ft. of Coax
- Replaces more than 25 discrete components and IC's

PIN CONFIGURATION

| | |
|----|--------------------|
| 1 | - 12v Return |
| 2 | - 12v |
| 3 | - 5v |
| 4 | Gnd |
| 5 | TPE |
| 6 | + 5v |
| 7 | Rx |
| 8 | TPF |
| 9 | TPD |
| 10 | TPC |
| 11 | Output S |
| 12 | Output C |
| 13 | Gnd |
| 14 | Gnd |
| 15 | TPB |
| 16 | TPA |
| 17 | Gnd |
| 18 | Pulse ² |
| 19 | Disable |
| 20 | Pulse ¹ |

GENERAL DESCRIPTION

The HYC9068 is a Coax Driver for ARCNET Local Area Networks. The HYC9068 is compatible with SMC's COM9026/COM90C26 Local Area Network Controller (LANC) and the COM90C32 Local Area Network Transceiver (LANT). The HYC9068 simplifies network implementation while pro-

viding considerable space and cost savings plus the high reliability of a single component.

The HYC9068 contains both receive and transmit filters to guarantee interference-free data transfer over 2,000 ft. of RG-62 coaxial cable at 2.5 Mbps data rate.

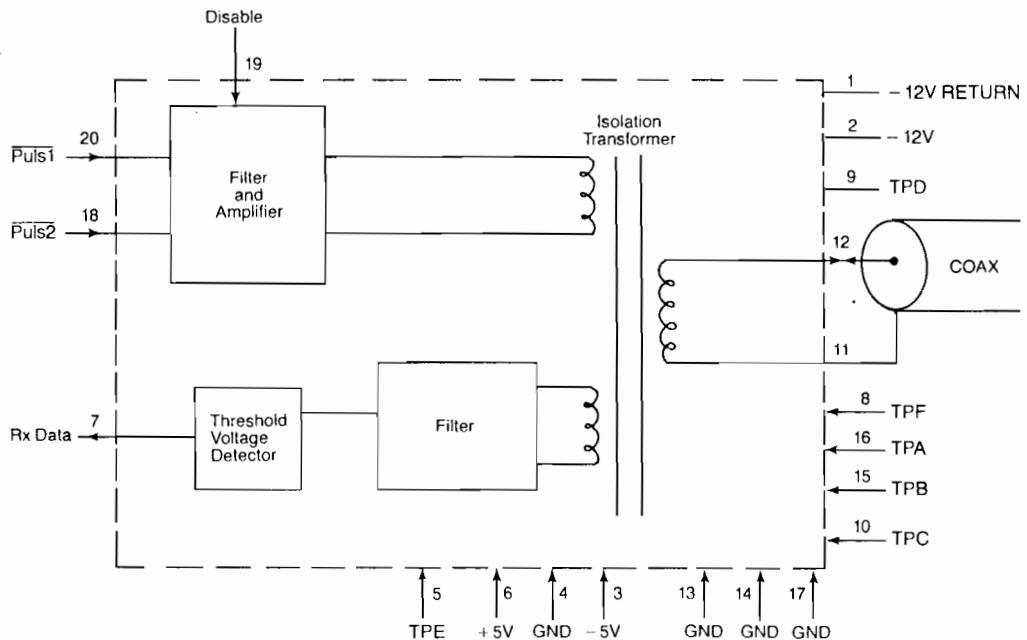


FIGURE 1—HYC9068-LAND BLOCK DIAGRAM

DESCRIPTION OF PIN FUNCTIONS

| PIN # | NAME | SYMBOL | FUNCTION |
|---------------------|----------------------|--------------------------------|---|
| 1 | -12V Return | GND | -12V Return |
| 2 | Power Supply | Vss | -12V Power Supply |
| 3 | Power Supply | VDD | -5 Volts Power Supply. |
| 4, 13, 14, 17 | Ground | GND | Ground |
| 6 | Power Supply | VCC | +5 Volt Power Supply. |
| 7 | Received Data Output | RX | Received Data, goes to RXIN of COM90C32 (TTL). |
| 8, 10, 15, 16, 5, 9 | Test Points | TPA, TPB, TPE TPD, TPC, TPF | Test Points. Make no connection to these pins. |
| 11 | COAX I/O | OUTPUT S | Connect to Coax Cable Shield (Outer Conductor). Bypass to GND is recommended. |
| 12 | COAX I/O | OUTPUT C | Connect to Coax Cable Inner Conductor (Center). |
| 18 | Pulse 2 | <u>PULS2</u> | TTL Level Input to the Transmitter Section (Active Low). |
| 19 | Disable | Disable | Normally connected to ground a high disables the transmitting. |
| 20 | Pulse 1 | <u>PULS1</u> | TTL Level Input to the Transmitter Section (Active Low). |

FUNCTIONAL DESCRIPTION

The easiest way to create the optimum input is to use the SMC COM90C32 to provide PULS1 and PULS2. The DISABLE (Pin 19) should be grounded during normal

CABLE be bypassed to ground by a parallel RC network (0.005 μ Fd/1Kv in parallel with two 5.6K ohm/1/2W resistors in series) as shown in typical interconnect diagram.

ELECTRICAL CHARACTERISTICS

MAXIMUM GUARANTEED RATINGS*:

| | |
|--|-------------------|
| Operating Temperature Range | 0 C to + 70 C |
| Storage Temperature Range | - 40 C to + 125 C |
| Lead Temperature (soldering, 10 sec.) | + 325 C |
| Positive Voltage on any pin with respect to Gnd | 8 V |
| Negative Voltage on any pin except Vdd and Vss with respect to Gnd | - 0.3 V |

*Stresses above those listed may cause permanent damage to the device. This is a stress rating only and functional operation of the device at these or at any other condition above those indicated in the operational sections of this specification is not implied.

NOTE: When powering this device from laboratory or system power supplies, it is important that the Absolute Maximum Ratings not be exceeded or device failure can result. Some power supplies exhibit voltage spikes or "glitches" on their outputs when the AC power is switched on and off. In addition, voltage transients on the AC power line may appear on the DC output. If this possibility exists it is suggested that a clamp circuit be used.

PRELIMINARY
Notice: This is not a final specification.
Some parametric limits are subject to change.

Electrical Characteristics $T_a = 0$ to 70 C, $V_{cc} = + 5V \pm 5\%$, $V_{dd} = - 5V \pm 5\%$, or $V_{ss} = - 12V \pm 5\%$

| Parameter | Min. | Typ. | Max | Unit | Comments |
|---------------------------|------|------|-------|------|-------------------|
| INPUT VOLTAGE LEVELS | | | | | |
| Pulse 1, 2, DSBL inputs | | | | | |
| Low-level, V_{IL} | | | 0.8 | V | |
| High-level, V_{IH} | 2.0 | 6 | | V | $l_{il} = - .8ma$ |
| Received signal amplitude | | | | Vp-p | $l_{ih} = .2ma$ |
| OUTPUT VOLTAGE LEVELS | | | | | |
| Rx Data output | | | | | |
| Low-level, V_{OL} | | | 0.4 | V | |
| High-Level, V_{OH} | 2.4 | 15.4 | | V | One TTL load |
| Transformer output | | 20 | | Vp-p | One TTL load |
| Cable noise amplitude | | | 4 | Vp-p | |
| POWER SUPPLY CURRENT | | | | | |
| I_{cc} | | | 250 | mA | |
| I_{dd} | | | 20 | mA | |
| I_{ss} | | | 50 | mA | |
| PULSE WIDTH | | | | | |
| Pulse 1, 2 inputs | | 100 | | nsec | |
| COAXIAL CABLE | | | 2,000 | ft | |
| Type RG-62 (93 Ω) | | | | | |

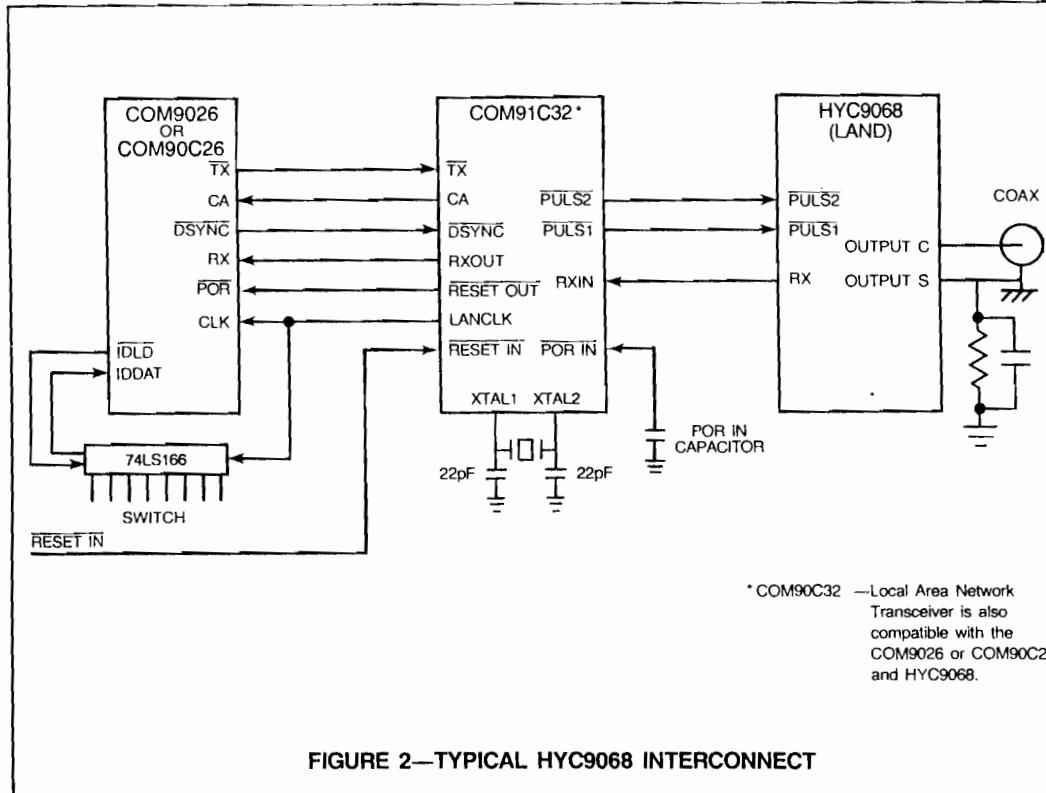


FIGURE 2—TYPICAL HYC9068 INTERCONNECT

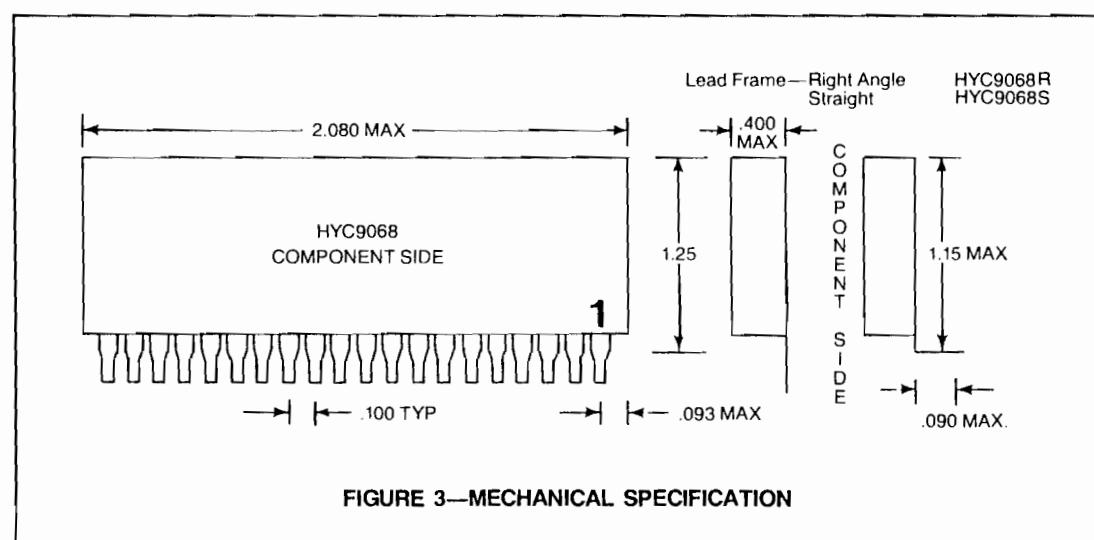


FIGURE 3—MECHANICAL SPECIFICATION

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**STANDARD MICROSYSTEMS
CORPORATION**

25 Marcus Blvd., Hauppauge, NY 11788
(516) 272-3100 TWX 510-277-6996

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